

REMARKS

This amendment and these remarks are responsive to the Office action dated June 22, 2006.

Specification:

By way of the present amendment, the specification has been amended to include a description of the results of ATRP modification of pore surfaces. The added language is copied from page 4 of U.S. Provisional Patent Application No. 60/463,030, from which the current application claims benefit and which was incorporated by reference in the first paragraph of the present application. Accordingly, no new matter is added by way of the present amendment.

Claims:

In the Office action, claims 1-8 are rejected under 35 U.S.C. 112, first paragraph. The Office action states that while the specification is enabling for a silica network and NIPAAm polymer as a stimuli responsive polymer, the specification does not reasonably provide enablement for any other network/polymer combination. Applicant respectfully submits that such rejection is improper under MPEP 2164.01(b). “As long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. 112 is satisfied. *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). Failure to disclose other methods by which the claimed invention may be made does not render a claim invalid under 35 U.S.C. 112. *Spectra-Physics, Inc.*

v. Coherent, Inc., 827 F.2s 1524, 1533, 3 USPQ2d 1737, 1743 (Fed. Cir.), *cert. denied*, 484 U.S. 954 (1987). Accordingly, because the Office action states that the specification is enabling for at least one method for making and using the claimed invention (i.e. a silica network and NIPAAm polymer), applicant respectfully submits that the specification has fulfilled the enablement requirement of 35 U.S.C. 112, and asks that such rejection be removed as improper.

In the Office action, claims 2-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. By way of the present amendment, claim 2 has been cancelled without prejudice, thereby mooting the rejection. Also by way of the present amendment, claim 3 has been amended to recite "...wherein adsorption of the molecular species by the mesoporous network is controlled by exposure of the stimuli responsive polymer to at least one stimuli" and to delete the phrase "the porous network is externally and reversibly controlled to modulate the...." Applicant believes such amendment more clearly defines the limitation of the claim. Applicant respectfully requests the rejection be removed in light of such amendment.

In the Office action, claims 1 and 5-6 are rejected under 35 U.S.C. 102(a) as being anticipated by Rao et al ("Rao") or, in the alternative, as being anticipated by US Patent No. 6,491,061 ("Lopez"). Claim 1, from which claims 5 and 6 depend has been amended to recite, "a mesoporous network, wherein the network is formed from a plurality of ATRP-modified mesoporous microparticles comprising a plurality of pores; and wherein said ATRP modification results in a plurality of stimuli responsive polymers grafted

from the modified pores, wherein the plurality of stimuli responsive polymers have substantially uniform chain lengths and are spaced at regular intervals throughout the porous network so as to control the transport of a molecular species through the porous network.” Grafting of stimuli responsive polymers (SRPs) via ATRP is described throughout the present application, see, e.g. page 4, paragraph beginning at line 11, as amended. The process of grafting SRPs via ATRP inherently results in SRPs having substantially uniform chain lengths and spaced at regular intervals. This is shown, for example, in the amended paragraph at page 4, which states that in ATRP, the lifetime of the radical on the surface is high (several hours) resulting in a relatively slow polymerization rate that allows uniform polymerization in confined spaces. This property allows for the formation of surface-grafted polymer brushes with predictable molar masses, low polydispersity, and controllable compositions. Moreover, during ATRP-assisted grafting of SRPs, polymerization is restricted to the surface such that no polymer forms in solution. This prevents clogging of the pores with free polymer and enables uniform polymerization. Accordingly, no new matter is added by the present amendment.

Applicant respectfully submits that neither Lopez nor Rao describe grafting of stimuli responsive polymers via atom transfer radical polymerization (ATRP). Moreover, neither Lopez nor Rao describe a mesoporous network including SRPs grafted to pores where the SRPs have substantially uniform chain lengths and are spaced at regular intervals throughout the porous network. Accordingly, Applicant respectfully submits

that claim 1 is anticipated by neither Lopez nor Rao. Claims 5 and 6 depend from claim 1 and are believed to be novel over the cited art for at least the same reasons.

Claims 2-4 and 7-8 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rao and/or US Patent No. 6,491,061 (“Lopez”). By way of this amendment, claim 2 has been cancelled, thereby mooting the rejection of claim 2. Claims 3-4 and 7-8 depend from claim 1 and, therefore, include all the limitations of claim 1. As discussed above, claim 1 has been amended and is believed to be novel over Rao and Lopez. Applicant further believes that the limitations of claim 1 are non-obvious over Rao and Lopez. Accordingly, applicant respectfully submits that, for at least the reasons discussed herein, claims 3-4 and 7-8 are patentable over the cited art.

Amendments and New claims:

Claims 1, 3, 4, 7 and 8 have been amended and new claims 21-28 have been added. Claims 21-28 depend from claim 1 and serve to further define various aspects of Applicant’s claimed invention. As described in greater detail above, support for the amendments to claims 1, 3, 4, 7 and 8 and new claims 21-28 can be found as described above as well as throughout the specification and in the claims as originally filed. No new matter is added.

Request for Information:

The Examiner has asked Applicant to provide the examiner with relevant information concerning presentations and or relevant publications related to the claimed

subject matter. As described above, applicant has amended the current claims to recite SRPs grafted to mesoporous microparticles via ATRP modification. Applicant hereby states that applicant did not publish any papers or publicly present any information related to SRPs grafted to mesoporous microparticles via ATRP modification prior to the priority date of the present application.

Conclusion:

Applicant believes that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, applicant respectfully requests that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, the Examiner is requested to please contact the undersigned attorney of record.

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being transmitted to the USPTO via secure EFS on November 20, 2006.


Ellen Gonzales

Respectfully submitted,

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